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Additionality après Paris Stronghold for Environmental Integrity?

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Abstract

This JIKO Policy Paper reviews the concept of additionality in the context of the Paris Agreement. Additionality is a key criterion that helps to maintain the environmental integrity of the Paris Agreement, especially when units created under Article 6.2 or 6.4 are used for offsetting purposes whether that is by Parties in order to meet their NDCs or whether by other entities with legal mitigation obligations, for example air carriers under the new CORSIA scheme of international aviation.

This Policy Paper lays the conceptual groundwork for an important policy debate of the day: how to operationalize additionality for international market-based cooperative climate action under Article 6 of the Paris Agreement. It does so by first reviewing key concepts such as offsetting, environmental integrity, and baseline. Subsequently, it explores the context of additionality under the Paris Agreement. More specifically it discusses what should be counted as the baseline for additionality demonstration. Status quo and business as usual, arguably, should not be considered adequate baselines as all countries now have an obligation to develop and implement NDCs. The NDCs themselves, however, are also not particularly suitable as baselines for a variety of reasons. Ultimately, any form of Article 6 cooperation should only be used when it serves as a leg-up for the host country of an activity to embark on

a truly transformational development pathway that is compatible with the long-term goals of the Paris Agreement.

The subsequent chapter then highlights the challenges with establishing additionality, that is establishing a causal relationship between a policy intervention and a proposed activity. Given the high degree of uncertainty with respect to the forms and types of activities that may eventually be realized under Article 6 of the Paris Agreement, the first challenge is to define the start and endpoint of a presumed causal chain. Only then is it possible to identify unmet necessary conditions for the proposed activity and to assess whether the respective policy intervention in principle addresses the unmet condition and whether it is fit to resolve the deficit.

Finally, the Policy Paper discusses aspects of international governance with respect to additionality. The analysis shows that the potential of international governance is severely limited, because it would almost inevitably require an assessment of the adequacy of a given host countries mitigation ambition. This, of course, collides with considerations of national sovereignty which make it highly unlikely that an international governance body would receive a mandate for such assessments in the first place. The Policy Paper concludes by highlighting further research needs.

1 Introduction

The Paris Agreement marks a turning point in international climate governance. It established a new international legal architecture that can help to govern the transformation of global economies and societies required to attain the ambitious goals of the agreement (Hermwille 2016). The key vehicle to this transformation are the nationally determined contributions (NDCs) that every country needs to develop, communicate and update every five years as of 2020 (UNFCCC 2016a, Art. 4). The first round of (intended) NDCs was announced already in run-up to the Paris conference by the vast majority of countries. However, the level of ambition expressed in those (I)NDCs falls significantly short of what is necessary to collectively embark on a transformation pathway that is compatible with limiting global warming well below 2 °C (UNFCCC 2016c).

The Paris Agreement has various in-built options to address this shortfall of mitigation ambition over time. One of those options is outlined in Article 6 of the Paris Agreement. Article 6.1 enables voluntary cooperation among parties to the Agreement “in the implementation of their nationally determined contributions to allow for higher ambition in their mitigation and adaptation actions and to promote sustainable development and environmental integrity” (UNFCCC 2016a, Art. 6.1).

There are a couple of ways in which Article 6 could achieve this contribution to raising ambition (Healy 2017; Kreibich forthcoming). However, there is also a risk that the use of market-based cooperative climate action actually undermines overall ambition, particularly if internationally transferred mitigation outcomes (ITMOs) generated in one country are used to offset/reduce domestic climate action in another. Although any mechanism(s) under Article 6

clearly must not operate as a pure zero sum game as was the case with the Kyoto mechanisms, the possibility to use ITMOs as offsets – be it by Parties to the Paris Agreement or, potentially, other actors with mitigation obligations such as airlines under the new Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) – threatens to undermine the environmental integrity of the international climate regime.¹ The very definition of “offsetting” is that a harm caused in one place is compensated by an activity “that results in extra good that is equivalent – in magnitude, approximate timing, and recipient population – to the original harm done” (Gillenwater 2012, 2–3). Offsetting threatens environmental integrity of the Paris Agreement, when the “extra good” is actually not something “extra”.

To assess the “extra”, the additionality concept has been introduced. According to Gillenwater **“additionality is about assessing causation. It is about deciding if a proposed activity is being caused to happen by a policy intervention”** (Gillenwater 2012, 3).

¹It bears noting that the offset nature of any mitigation units generated under Article 6 is determined not by the modalities by which those units are supplied, but rather by the demand side and the way in which the units are utilized. One key concern is that some countries may use ITMOs to buy themselves out of serious domestic efforts. One way to mitigate this would be to determine that countries can use ITMOs only supplemental to the highest possible ambition of domestic climate action. The notion of supplementarity was already introduced in the Kyoto Protocol but never quantified in any meaningful way. When the ambition of the Paris Agreement is taken seriously, this would mean that Parties should only be able to use ITMOs towards the NDCs on the condition that they themselves have embarked on a transformational pathway compatible with limiting global warming to well below 2°C.

The concept of additionality is not mentioned in the Paris Agreement itself.² And even the decisions adopting the Paris Agreement refer to additionality only in the context of the mandate to develop modalities and procedures for the “mechanism to contribute to the mitigation of greenhouse gas emissions and support sustainable development” established in Article 6.4 (UNFCCC 2016b, para. 37). However, given the essential contribution of additionality to safeguard environmental integrity and the explicit mandate expressed in Art. 6.1 “to promote environmental integrity” it is in our view necessary to further extend and adapt the additionality concept to the Paris Agreement and any form of market-based cooperative climate action under its Article 6.

Yet, doing so is challenging in some ways. It is unclear, for example, what kind(s) of the “policy interventions” Gillenwater refers to are going to be pursued under Article 6. Or does even the mere existence of Article 6 constitute such a policy intervention? Is it the option to trade ITMOs and use them for offsets? Is it the revenue stream associated with the trade of ITMOs? And how is an “Article 6 intervention” to be distinguished from other policy interventions initiated under the Paris Agreement: conditional and unconditional NDCs, and/or financial support provided corresponding to Article 9 of the Paris Agreement.

Another challenge relates to the notion of the “proposed activity”. Contrary to Articles 6 and 12 of the Kyoto Protocol, which established Joint Implementation (JI) and the Clean Development Mechanism (CDM), Article 6 of the Paris Agreement does not specify that cooperation is to take the form of “project activities”. It is currently unclear what form market-based Article 6 cooperation may take, it could be individual

projects as in CDM/JI, a mitigation programme, or even a (sectoral) policy. Parties currently seem to converge on a consensus that all scopes of activities should be allowed (Obergassel 2017). Especially policy-based approaches may become challenging, because policies often do not directly reduce emissions but only indirectly by setting incentives. The longer the causal chain between the “proposed activity” and the final emission reduction, the more challenging it may become to demonstrate causality, particularly when other causal factors are present.

The role of the additionality concept is not confined to safeguarding environmental integrity in the narrow sense outlined above. It has been highlighted that additionality is also a prerequisite for cost effectiveness, given that financial resources to implement mitigation activities are scarce: “Additionality is a prerequisite to a socially and economically efficient allocation” (World Bank 2016, 2). This is irrespective of whether ITMOs are used for offsetting or not. When funding is provided for activities that actually do not require such support, this can lead to windfall profits for those that receive unnecessary support whereas other activities will not receive the required support to actually get implemented (see also Hermwille and Mersmann 2015). Such misallocation of scarce funding will make achieving the ambitious objectives of the Paris Agreement even harder.

This policy paper sets out to lay the conceptual groundwork for a more informed discussion of the challenges with applying and operationalizing the additionality concept in the context of Article 6 of the Paris Agreement.

²In contrast to that the Kyoto Protocol explicitly mentions additionality both in Article 6.1b (Joint Implementation) and Article 12.5c (Clean Development Mechanism).

2 Key Concepts and Their Relation to Additionality

According to the World Bank (2016), all current mitigation crediting standards and schemes share a common definition of additionality:

A credit is considered additional if the emissions reduction that underpins the credit would not have occurred in the absence of the activity that generates the unit (the BAU scenario). (World Bank 2016, 3)

This definition, however, is only of limited value when considering Article 6. First, it is not even clear whether or not actual “credits” or any form of units will eventually be issued that can be considered a commodity or whether or not ITMOs will simply be transferred on a bilateral and ad hoc basis without a formal or even informal international market. Given the wide range of possible forms of cooperation, it seems at least questionable whether or not ITMOs will be units with comparable properties.

Moreover, as Gillenwater (2012) highlights, the definition of additionality presented above can easily become circular if the definition of the BAU scenario is not carefully considered. If for the BAU one considers a hypothetical case asking what would have happened without the project/activity, one ends up confounding cause and effect. Instead, Gillenwater suggests to consider the “policy intervention” for assessing the BAU scenario.

For the existing crediting schemes that apply the above-mentioned definition of additionality, the policy intervention is seldom explicit but nevertheless relatively straight forward: the issuance of tradable credits that promise a revenue stream to support the proposed activity. Yet, in the absence of a clear picture how and

what kind of policy interventions can be accommodated by Article 6, it may be necessary to revert to a more abstract definition of additionality presented above: “[A]dditionality is about assessing causation. It is about deciding if a proposed activity is being caused to happen by a policy intervention” (Gillenwater 2012, 3).

In the context of the Paris Agreement, we need to add another layer: it is necessary to consider the relationship with the host country’s domestic climate policy as expressed in its NDC and the “policy intervention” that is supposed to trigger transferable emission reductions. The following section explores and explains a number of key concepts that are instrumental to explore the question of additionality under the Paris Agreement in more detail.

2.1 Offsetting

The concept of offsetting can be defined as follows: A harm caused in one place is compensated by an activity “that results in extra good that is equivalent – in magnitude, approximate timing, and recipient population – to the original harm done” (Gillenwater 2012, 2–3).

The very use of the concept of offsetting under the Kyoto Protocol has been subject to fierce criticism. From the start, critics argued that the possibility to use offsets lifted the pressure off buyer countries to transform their own economies (Luhmann and Sterk 2008). When implementation of the Kyoto mechanisms was underway, there increasingly emerged a sense that offsetting was not good enough, that use

of the mechanisms should also yield a “net atmospheric benefit” (Cames 2009; Schneider 2012).

While it has not been possible to implement achievement of “net atmospheric benefits” in the Kyoto mechanisms, under the Paris Agreement the “zero sum game” of pure offsetting must not continue. This is clear from two passages in Article 6: (1) Article 6.1 clearly states that voluntary cooperation on the implementation of NDCs is supposed “to allow for higher ambition” (on the issue of ambition raising see Kreibich forthcoming). And (2) the mechanism established in Article 6.4d foresees that the application of the mechanism shall “deliver an overall mitigation in global emissions” (UNFCCC 2016a; for a discussion of the genesis of this provision see Marcu 2016).

Although from this it is quite clear that market-based cooperative action must result in net “atmospheric benefits” (Cames 2009; Schneider 2012), it is also evident that tradable units generated under Art. 6 can still be used to compensate domestic climate action. Art. 6.2 enables “the use of internationally transferred mitigation outcomes towards nationally determined contributions” (UNFCCC 2016a). And a range of countries have indicated to do so in their (i)NDCs (Obergassel and Gornik 2015). Admittedly, this was done before the role and setup of international carbon markets under the Paris Agreement was adopted. In fact, the role of market-based instruments under the Paris Agreement was very uncertain until the very last hours of COP21 (cf. Obergassel et al. 2015).

Moreover, it is not unlikely that any units generated under Article 6 will also be used under CORSIA that has been introduced by the International Civil Aviation Organisation (ICAO) (ICAO 2016).

However, there are also ways in which units could be used for non-offsetting purposes. Article 6 and in particular the mechanism established in accordance with Art. 6.4 could serve as

means to keep track of mitigation action supported by international climate finance, in the mode of results-based finance (Kreibich 2014). Also, Parties could define commitments to achieve mitigation outcomes abroad that are perfectly complementary to any domestic targets. Ultimately, the more flexibility there is to substitute domestic climate action with climate action abroad, the stronger the offsetting character.

2.2 Environmental Integrity

The Paris Agreement sets ambitious long-term goals at the international level. However, it does not break down this collective goal into specific responsibilities of individual countries. Instead, it has established a mandatory procedure to develop “nationally determined contributions” (NDCs) and to implement policies to achieve the self-imposed climate change mitigation objectives outlined in the NDCs. So what does “environmental integrity” mean in this context?

Some of the submissions from Parties note that there is no clear, universally adopted definition of the term. Most submissions converge on a view that environmental integrity means that one carbon unit represents one ton of CO₂e and is counted only once towards a commitment. One submission posits that environmental integrity should also address potential areas of conflicts with other environment-related aspects, for example, the conservation of biodiversity (Obergassel 2017).

The word “integrity” is defined as “the quality or state of being complete or undivided” (Merriam-Webster 2017). For the purpose of the subsequent analysis, the most practical way of comprehending environmental integrity as “a situation where the individual elements or mechanisms of an overarching instrument do not undermine the (environmental) goals of

this instrument.” (Kreibich and Hermwille 2016, 1). The long-term objectives of the Paris Agreement are expressed in Article 2: limiting global warming to well below 2°C, fostering adaptation and climate resilient low GHG emissions development, and financial flows that are consistent with such climate resilient and low GHG emission development (UNFCCC 2016a, Art. 2). Therefore, a corollary of this definition of environmental integrity is that the use of Article 6 mechanisms and international transfer of mitigation outcomes to offset domestic mitigation efforts in the importing country must not undermine the effectiveness of other elements (e.g. NDCs, climate finance, etc.) to achieve the long-term objectives.

Environmental integrity of the Paris Agreement entails two dimensions (cf. Kreibich and Hermwille 2016):

- The **static challenge** refers to the integrity of NDCs in the current period. The utilization of Article 6 mechanisms must not create loopholes that would allow parties to avoid or dodge domestic climate action in accordance with their current NDC. This includes, for example, the issue of double counting of units generated under Article 6 (cf. Schneider, Kollmuss, and Lazarus 2015) and the issue at the core of this paper, the use of non-additional Article 6 activities to achieve NDCs.
- The **dynamic challenge** refers to the increase of ambition over time. Art. 4.3 states that “[e]ach Party’s successive nationally determined contribution will represent a progression beyond the Party’s then current nationally determined contribution and reflect its highest possible ambition,...” (UNFCCC 2016a, Art. 4.3). The utilization of Article 6 mechanisms must not set incentives for countries to limit the level of ambition of subsequent NDCs as to maximize the potential to sell and export ITMOs.

2.3 Baselines

A baseline is a reference scenario against which additionality is assessed and which also serves as a benchmark to determine emission reductions achieved in market-based instruments of the “baseline-and-crediting” type (see box below). The concept of baselines is instrumental to assessing additionality. As Gillenwater puts it: “additionality is the process of determining whether a proposed activity is better than a specified baseline” (Gillenwater 2012, 3).

Under the Kyoto Protocol, non-Annex I countries did not have any mitigation obligations. Reference scenarios for the CDM therefore only had to take into account existing policies.³ Under the Paris Agreement, all signatories are obliged to develop NDCs and to increase the level of ambition over time (Art. 4.3) Determining the baseline would arguably have to require some foresight into how national mitigation objectives and the policies implemented to achieve those objectives might develop.

Note that in order to calculate emission reductions in a crediting scheme, also a quantified version of a baseline is required (for additionality assessment a qualitative scenario would be sufficient in most if not all cases). The crediting baseline does not necessary align perfectly with the reference scenario against which additionality is assessed. One way to hedge environmental integrity risks would be to combine relatively lenient additionality baselines with more stringent crediting baselines. This would lower the entry barriers because demonstrating additionality becomes more feasible, yet it would reduce the amount of credits issued for each project.

³In 2005 the CDM Executive Board determined that project developers do not have to take into account new policies that would reduce emissions (E- policies) (CDM Executive Board 2005). For a more detailed discussion see Spalding-Fecher (2013)

3 Additional to What?

Determining the “Extra”

One of the great challenges for additionality within the legal architecture of the Paris Agreement is to determine the relationship between a prospective policy intervention that is supposed to incentivize additional mitigation activities and the status quo of national climate policies corresponding to the Paris Agreement. In other words, it is difficult to determine what and where any “extra” good can be done.

This was much more easy in the world of the Kyoto Protocol in which there were basically a black and white perspective: developing countries (not listed in Annex I of the convention) did not have any legal obligations to reduce or limit GHG emissions. On the level of the policy intervention, it was clear that the incentive provided by the CDM was to be considered, there was no competing or complementary incentive in place from the international level.

Hence the question of additionality could be considered on the level of existing technologies and policies in the country and did not (or only to a limited extent) have to take into account dynamic perspectives. Put simply, every activity that transcended the national state of technology and policy was in principle additional.

In contrast to that, developed countries (listed in Annex I) did have formal obligations to reduce their emissions and these obligations extended to the full “Kyoto basket” of all major GHGs and covered all sectors. That meant that from an international perspective, there was no room for “extra” activities. Hence, it was left to the discretion of host countries of mitigation projects to determine whether or not they were considered additional. Any mitigation out-

comes that were transferred had to be deducted from the country’s carbon budget determined by its quantified limitation and reduction obligation under the Kyoto Protocol. This was the basic functioning of Joint Implementation.

With the Paris Agreement, there are now many more shades of grey. This section sets out to explore these shades in more detail. First of all, the Paris Agreement does not differentiate among countries any more with respect to the type and legal character of obligations. Its Article 4 requires all countries alike to “prepare, communicate and maintain successive nationally determined contributions that it intends to achieve. Parties shall pursue domestic mitigation measures, with the aim of achieving the objectives of such contributions” (UNFCCC 2016a, Art. 4.2).

A first round of such (intended) nationally determined contributions was already prepared in the run-up to the Paris conference. However, negotiations on a common format and information requirements for those (i)NDCs had failed in Lima, one year ahead of COP21 in Paris (Ott et al. 2014). Consequently, the (i)NDCs submitted displayed a great diversity in terms of the types of targets, time frames, reference years and essentially every aspect of them (Kreibich and Obergassel 2016).

Moreover, the Paris Agreement does not impose any legal obligations to actually achieve the self-imposed goals (Bodansky 2016; Oberthür and Bodle 2016; Obergassel et al. 2015). At least for developed countries, this is a step backwards as regards the comparability and le-

gal compulsion of commitments (Depledge 2016).

The disparate structure and the lack of clarity and comparability of NDCs makes for a difficult assessment of what is “extra” and what is not. This is true both for the potential demand as well as for the supply of ITMOs. A range of countries have indicated in their (i)NDCs that they are intending to rely on international carbon trading in order to attain their mitigation pledges (Oberghassel and Gornik 2015; IETA 2017). For some of these countries it remains unclear what part of their commitment is to be achieved domestically and what part is supposed to be “imported” by supporting mitigation action elsewhere. Other countries make a more clear distinction. Norway, for example, has indicated a fixed contribution of reducing GHG emissions 40% below 1990 levels. This shall be achieved through collective delivery with the European Union. However, Norway also specifies that it will adopt a binding carbon neutrality goal for 2030 that is to be attained by “achieving emission reductions abroad equivalent to Norwegian emissions in 2030” (Government of Norway 2015, 5).

The issue is even more true for the potential supply side for ITMOs. The most basic of viewpoints would be to take Art. 4.3 literally that states that NDCs will “reflect [a Party’s] highest possible ambition...” (UNFCCC 2016a, Art. 4.3). In this case, there simply would not be anything “extra” left. However, for two reasons this is not a viable position: firstly, Article 4.3 continues to read “reflecting its common but differentiated responsibilities and respective capabilities, in the light of different national circumstances” (UNFCCC 2016a, Art. 4.3). In particular the “respective capabilities” is of interest here as the capabilities could be improved through international market-based cooperative climate action.

Secondly, the reality of the first round of NDCs falls far short of the ambition set out in Art. 4.3.

In the decisions adopting the Paris Agreement, Parties explicitly “noted with concern” that the collective effort expressed in the (i)NDCs falls far short of what is necessary to limit global warming to well below 2°C (UNFCCC 2016b, para. 17, see also 2016c; Fawcett et al. 2015).

What is more, there is in many countries also a mismatch between the commitments made in terms of mitigation goals and the policies and measures in place (or intended to be implemented) to meet the same goals (Climate Action Tracker 2017).

Also, much like at the demand side, several countries have indicated that mitigation commitments under their respective NDCs are contingent on financial and/or technological support. In some countries, this support is explicitly expected to be generated and channelled through market based cooperative climate action (Oberghassel and Gornik 2015). Not in all cases it is indicated what part of the NDC is supposed to be achieved unconditionally and which part may be contingent on financial flows from developed countries.

This brings us to another dimension to be considered: how do the financial flows associated with ITMO sales relate to flows of international climate finance according to Article 9 of the Paris Agreement (see also Spalding-Fecher et al. 2017) and the goal of mobilizing at least USD 100 billion annually as of 2020? Should the availability of international climate finance be the baseline against which additionality is assessed? What if a country has specified a conditional mitigation target in its NDC that is contingent on the availability of international climate finance, the required support is not granted and consequently the country cannot (fully) realize its conditional target? If that country fills the funding gap by selling ITMOs, should these ITMOs be considered additional?

There is yet another way in which one could conceptualize the “extra”: the scope of NDCs varies greatly across countries. Only a minority

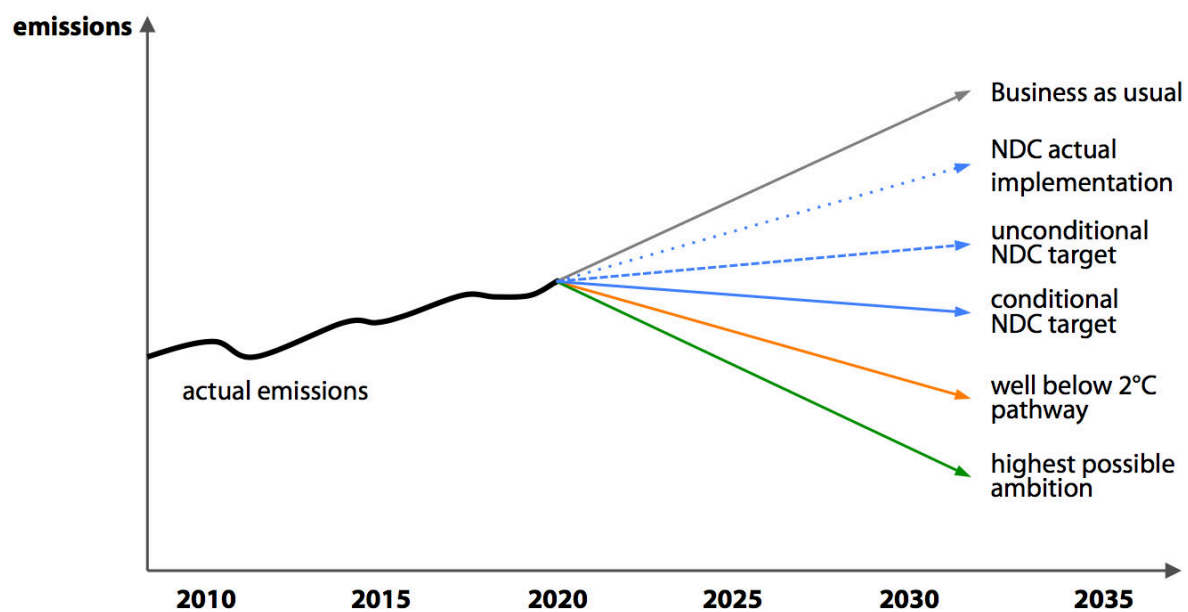


Figure 1: Illustration of various potential baselines for additionality assessment. *Source: Wuppertal Institute*

of countries have expressed their mitigation pledges encompassing all sectors and all greenhouse gases. Many countries only include selected sectors in their respective targets and exclude others. Some countries don't even have quantitative targets but have committed to introduce certain policies and measures. Uganda, for example, has no formal GHG target (or any other target-metric for that matter), but has committed to specific actions in the power sector, forestry and wetlands. In the power sector, the construction of enabling infrastructure for electricity sector development, including power lines, substations and transmission facilities was pledged with a view to achieve a total of at least 3,200 Mega Watts (Ministry of Water and Environment of the Republic of Uganda 2015). Any proposed activity that is not part of the specific actions pledged in the NDC would constitute an "extra", one could argue.

The various options how to conceptualize the different possible baselines towards which additionality could be assessed under the Paris Agreement are illustrated in figure 1 above.

The most stringent baseline against which to assess additionality is the "highest possible lev-

el of ambition". It would essentially denote that there is nothing that is additional. However, this is neither realistic nor practical.

On the other side of the spectrum, one theoretical option for a baseline against which to assess additionality simply is a projection of business as usual development. This, however, would not reflect the legal responsibilities that every country has assumed under the Paris Agreement, namely to develop and maintain NDCs and to implement policies to achieve them.

There are various ways in which NDCs could be considered as baselines for additionality. Should the unconditional⁴ target (if specified) be the baseline? Should it be the conditional target? This latter option would at least allow to avoid one area of potential conflict, namely that sales of ITMOs (that may be used to offset domestic mitigation elsewhere) crowds out other forms of climate finance that could not be used for offsetting and hence lead to lower overall

⁴Note that there is no universally accepted definition of what constitutes a conditional or unconditional NDC.

emissions. Last but not least, one could consider the actual policies and measures implemented in the context of the NDC as the baseline. However, if an implementation gap exists in the potential host country, i.e. the country is unlikely to meet its NDC target with current policies, the transfer of ITMOs could result not in an increase of ambition but the opposite, particularly if the ITMOs are used for offsetting purposes.⁵

Using NDCs as a baseline for additionality assessment is not only problematic for the technical reasons outlined above, but also because the NDCs themselves may be inadequate. To ensure that Article 6 strictly contributes to an increase of the level of ambition, even if ITMOs are used to (partially) offset domestic climate action in the buyer country, the most adequate baseline would be an emissions pathway that is compatible with the long-term goal of the Paris Agreement, to limit global warming to well below 2 °C.

While this may be theoretically compelling, it is methodologically challenging. Who is to determine what a 2 °C pathway could or should look like? It is also politically challenging, because NDCs are nationally determined. It is hardly plausible that Parties would accept an independent assessment, a top-down imposed benchmark that goes beyond what they have determined for themselves as a sovereign nation. What is more, a 2 °C pathway would most likely be so aggressive and ambitious, that there is virtually no mitigation potential left that could be transferred to another country.

Considering the transformative ambition of the Paris Agreement, it is ultimately necessary that with the support of Article 6, the host country of a proposed activity would have to end up on

a transformative pathway well below 2 °C pathway. If one cannot expect Article 6 to increase the ambition even beyond the 1.5/2 °C threshold, at least it should serve as a leg-up to a transformational development pathway. In essence this would mean to substitute the additionality criterion with a transformational change criterion. The questions implied in additionality are: What is? And how does the proposed activity go beyond the status quo? Whereas the questions to ask to assess transformational change are: What ought to be? And how can the project get us there?

However, operationalizing the transformational change criterion for Article 6 would most probably be no less challenging. The issue of “transformational impact” has been discussed at some length regarding public climate finance (Mersmann and Wehnert 2015). The NAMA Facility has the ambition to finance only NAMAs with transformational impact. Similarly, the Green Climate Fund has the objective to promote a “paradigm shift”. However, the criteria adopted by the NAMA Facility and the GCF to operationalize this ambition have so far been rather vague (cf. Hermwille, Obergassel, and Arens 2016). Arguably, the reason is that they have tried to define general criteria that can apply to all sectors. A meaningful definition of transformational impact is likely only possible at the sector level and would require further research.

⁵ The long-term low greenhouse gas emission development strategies that Parties are invited to prepare in accordance with Art. 4.19 of the Paris Agreement could be another reference point. However, to date only a handful of countries have developed and published such long-term strategies.

4 Additional by What Means – Confounded Causalities

Given the wide range of possible forms market-based cooperation under Article 6 could take, there is no single approach to additionality and additionality demonstration that can accommodate all imaginable cases. The subsequent section starts out with presenting a range of potential types of cooperation and discusses what can be considered cause and what effect for the respective types. Only then do we turn to assessing the causal relationship between both ends of the presumptive chain.

4.1 Start and Endpoint of the Causal Chain

As stated in the introduction, “additionality is about assessing causation. It is about deciding if a proposed activity is being caused to happen by a policy intervention” (Gillenwater 2012, 3). In order to resolve this question, we first need to define what the “policy intervention” is and what kind of “proposed activities” we are foreseeing that would generate the very mitigation outcomes that are supposed to be traded internationally. That is, before assessing a causal chain we need to define the start and the endpoint of that presumptive causal chain.

At the most general level, one could argue that Article 6 itself can be considered a policy intervention. After all, the “prototype” for a market-based mitigation mechanism and the harbinger of additionality as a concept, the CDM, was always considered as such a policy intervention.

Considering Article 6 as a policy intervention would correspond to the CDM which, likewise,

was established as a single paragraph, Article 12 of the Kyoto Protocol (UNFCCC 1997).

However, Article 6 of the Paris Agreement differs from the CDM and Article 12 of the Kyoto Protocol in that it is more of a container of potentially a series of mechanisms or instruments to cooperate internationally. There is Article 6.2 that establishes so-called “cooperative approaches” which enables member states to collaborate directly without a formal set of modalities and procedures, but Parties “shall apply robust accounting [...] consistent with guidance adopted by the Conference of the Parties serving as the meeting of the Parties to this Agreement [CMA]” (UNFCCC 2016a, Art. 6.2).

In contrast to that, Article 6.4 establishes a new mechanism “to contribute to the mitigation of greenhouse gas emissions and support sustainable development” (UNFCCC 2016a, Art. 6.4). This mechanism will be supervised internationally and be subject to mandatory modalities and procedures to be adopted by the CMA.

Last but not least, Article 6.8 refers to “non-market approaches” that may assist countries in implementing their NDCs. While there is not much common ground on how such non-market approaches may look like, it is pretty clear that they are not going to produce any transferable mitigation outcomes

Given this wide range of potential policy interventions it does not seem to be particularly practical to consider Article 6 as THE policy intervention. Asking whether or not the existence of Art. 6 has or has not caused a particular mitigation activity is just too generic to produce meaningful answers.

In order to be able to ask the causality question it is necessary to be able to describe sufficiently accurately the policy intervention that is supposed to have caused a mitigation outcome.

Given that in the international realm it is very unlikely that policy intervention of the regulatory type are imposed by one country on another, it is safe to say that a policy intervention to be considered for Article 6 is almost always associated with a transfer of resources. Either it is a direct payment or it is the signing of a memorandum of understanding that contractually fixes payments on the condition of certain (mitigation) results or conducts (e.g. implementation of certain policies and measures). As stated above, with the CDM, the policy intervention was the mechanism itself that prescribed a procedure that if followed through would result in the issuance of certified emission reductions (CERs) which when sold would yield an uncertain yet significant stream of revenues for the project proponent.

In the following section, we are trying to anticipate a range of different type of activities that may be used under Article 6.2 and 6.4. For each of them, we discuss what would constitute the “policy intervention” and what the “proposed activity” that is supposed to be caused by the former. For lack of better terminology we have tried to differentiate project-based, programmatic, sectoral and policy-based approaches. However, this categorization admittedly is not always clear-cut, yet we think it helps to guide through an otherwise impenetrable thicket of different and partially overlapping design concepts.

Project-based crediting mechanism

International cooperation under the Paris Agreement could revert to a project-based mechanism similar to the CDM and JI. In this case, the identification of policy intervention and proposed activities is straightforward:

much like the CDM, the establishment of the mechanism itself, as long as its procedures guarantee with reasonable confidence a stream of revenue to the project proponent, would be the policy intervention and each project is a “proposed activity”. While in this case it may be relatively easy to identify the starting and end points, it does not necessarily make it very easy to establish causality between the two. The very challenges summarized in section 3 apply here as well.

Programmatic approaches

The programmatic approach, also known as Programmes of Activities under CDM/JI, bundles a range of similar, usually smaller scale projects into one programme. For the programmatic approach, there are basically two ways to conceptualize the causal chain that leads to mitigation outcomes.

(1) the programme itself could be the policy intervention. For example, a country A could cooperate with country B in setting up a large programme for energy efficient residential building renovation that is co-financed (and potentially supported through technology transfer) by country B. Such a form of cooperation could be one incarnation of a cooperative approach under Art. 6.2. The proposed activities in this scenario would be the refurbishment of each individual building (or building complex for that matter). Assessing additionality for this case would first have to address the question of how the programme itself relates to the host countries NDC and other (un)conditional policies and measures implemented to attain the NDC. And second, it would require to assess whether each refurbishment project (proposed activity) is additional in the sense that it would not have happened without the support of the programme.

(2) the programme itself is the proposed activity and is incentivised by an international mech-

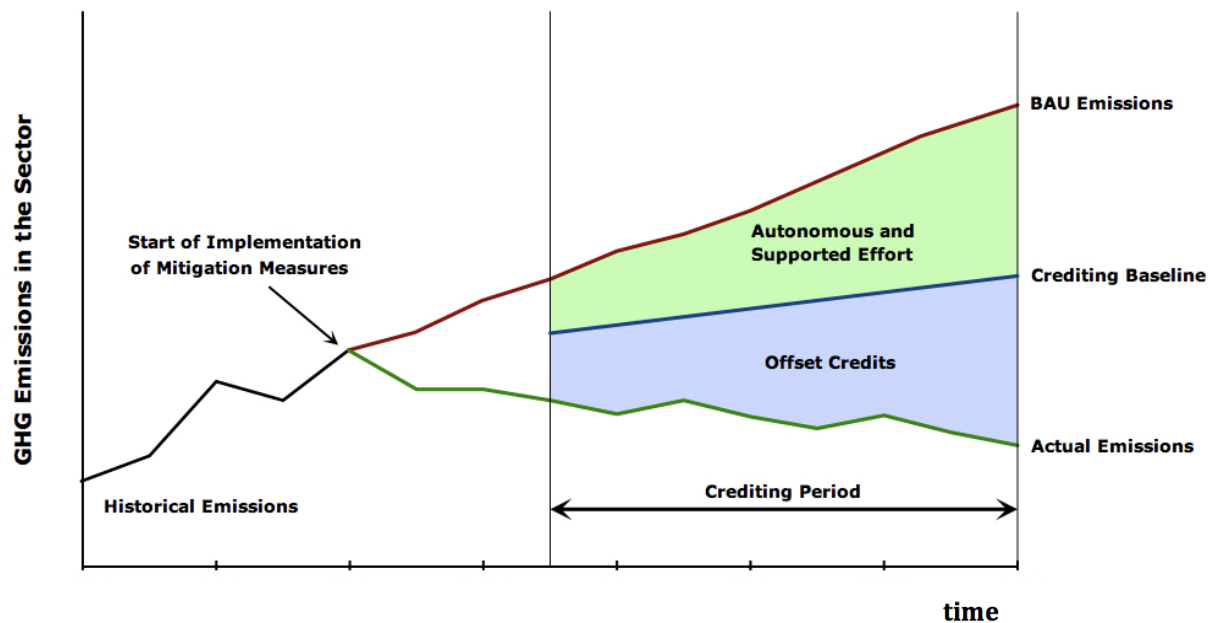


Figure 2: Schematic illustration of a sectoral crediting mechanism. *Source: modified based on Schneider and Cames (2009)*

anism. This mirrors the CDM's PoA modality. In this case, the question of additionality would assess whether or not the programme itself is something "extra". Each activity (or component project activity – CPA – under the CDM) does not have to demonstrate additionality but serves to determine and verify the mitigation outcomes.

Sectoral Approaches

With sectoral approaches, there are again at least two ways of conceptualizing causality between a policy intervention and a proposed activity. One way a sectoral approach could look like was essentially established in form of the standardized baselines (SB) framework of the CDM. Under this framework, a scenario can be developed for an entire sector following a standardized approach (BMUB 2015; Hermwille, Arens, and Burian 2013). This scenario determines the crediting baseline and can also be used to pre-determine a list of technologies that can forego additionality demonstration at the level of individual project or at least have a streamlined additionality assessment. In this case, the sectoral standardized baseline could

not be considered a policy intervention, it would require an overarching mechanism of some sort. The proposed activity would be any mitigation activity that applies the SB framework.

Another form of a sectoral approach is so-called sectoral crediting (Sterk et al. 2015; Schneider and Cames 2009). This concept, already being discussed for more than a decade, could in principle also be applied under Art. 6. Sectoral Crediting has been proposed in various forms, but under given circumstances probably the most plausible application is a bilateral application of the concept as "cooperative approach" under Art. 6.2 and without formal international oversight. This is what we consider in the subsequent analysis.

Under such a Sectoral Crediting Mechanism, the host country would determine a target or a "crediting baseline", for an entire sector or sub-sector (e.g. the power sector) reflecting the host countries' own effort and possibly also efforts supported by public climate finance. Under Article 6, this crediting baseline would have to reflect the host country's NDC. If actual emissions (green line) of the sector stayed below the

baseline, the government would receive tradable emission reduction credits according to the difference between crediting baseline and actual emissions as assessed retroactively (blue area).

However, establishing such a scheme can hardly be seen as a policy intervention, as it would not provide an immediate incentive to any private entity, but only to governments who would be first-order responsible for the reduction of emissions. The actual incentive would have to come up with more concrete policy interventions. The host country government could draw on a broad range of instruments, including carbon taxation, tax incentives for low-emission energy provision, renewable energy feed-in tariffs or portfolio standards, or other options.

Essentially in this case, additionality is not assessed independently based on objective parameters, but it is defined in the act of agreeing the crediting baseline between host country and investor country. By setting the crediting baseline, the two parties agree politically that everything beyond that baseline constitutes additional mitigation outcomes. Hence, there is no need to assess ex-ante the additionality of individual projects, programmes or policies the host country may implement to reduce emissions below the agreed baseline. This is substituted by ex-post verification of the emissions. In a sense, the risk of non-additional projects is transferred from an environmental risk faced by the global atmosphere to a financial risk faced by the host country of the proposed sectoral crediting scheme.

The challenge with this approach is that it may be prone to a “coalition of the unambitious”. As stated above, additionality is basically defined in the agreed determination of the crediting baseline. However, if both parties involved have not much interest in ambitious climate action, the host country could propose a very unambitious crediting baseline that is not substantially

below BAU and the investor country could happily agree because this would likely produce a substantial amount of low-cost ITMOs. The two countries could use this mechanism to mask their lack of mitigation ambition. In the absence of formal obligations under international law, public scrutiny is the only means that can help to hold policy makers accountable and to discipline them to implement their NDCs. Such “coalitions of the unambitious” could severely undermine such public scrutiny.

Policy-based approaches

The range of possible incarnations of policy-based incarnations of cooperative approaches or mechanism(s) under Article 6 is potentially extremely diverse. In the subsequent section, we will discuss a list of illustrative examples. This list certainly should not be considered exhaustive nor exclusive.

One example for a policy-based cooperative approach would be financial support for a feed-in tariff in one country provided by another country and a subsequent transfer of mitigation outcomes resulting from the increased deployment of renewable energy in the host country. With feed-in tariffs (FIT), for each MWh of renewable energy fed into the grid, either a guaranteed fixed remuneration (fixed payment FIT) or a price premium on whole-sale prices (premium payment FIT) is being disbursed. International cooperation could occur if country A agrees to contribute a share of premium/fixed payment per MWh renewable energy produced in country B.

For the matter of determining additionality, the policy intervention would be increase of the tariff or the establishment of the FIT if there was no such policy in place before. In the latter case, all RE projects that benefit from the FIT can be considered as proposed activities. In the former case, this is much more challenging. It is virtually impossible to assess which installations

would also have been built at a lower tariff rate and which investments have become viable due to the increased FIT rate (Obergassel et al. forthcoming). It is therefore impossible to determine the exact “proposed activity” which may or may not have been caused by the top-up of the FIT. Additionality determination would thus have to revert to an analysis of systemic causation (Lakoff 2014), e.g. by applying statistical models.

Apart from the additionality of individual RE installations, it would also be necessary to assess whether or not the increase/establishment of the FIT is additional. If the host country has formulated a GHG-related target and/or a RE target in its NDC, it will be challenging to assess whether and to what extent the international cooperation goes beyond those commitments.

Another policy-based approach that is being considered as a potential candidate for international cooperation under Article 6 is the linking of existing domestic or regional emissions trading schemes (ETS). However, if these ETS are already pre-existing, just allowing trade between the two systems hardly constitutes a “policy intervention” in the sense that it will trigger additional mitigation efforts. As long as the emissions caps of the two ETS are not tightened further, the linking of the two systems will merely shift where the emissions occur.⁶ More emission reductions will be realized where mitigation potentials can be realized relatively cheaper.

In this case, additionality probably is not a particularly suited concept to safeguard environmental integrity. Instead, environmental integrity critically hinges on the stringency of the emissions cap in the two ETS to be linked to-

gether. If one of the systems has a cap that is not binding in that it is so generous that even under BAU development, there will be no scarcity of allowances. This so-called “hot air” could be transferred from one system to the other (Kollmuss, Schneider, and Zhezherin 2015), push down allowances prices in the more stringent ETS and hence reduce incentives for domestic mitigation action. If emission allowances can be carried over from one crediting period to another (banking) this could even undermine the ambition of future NDCs (Raeschke-Kessler 2017).

4.2 Assessing Causal Chains

Once we have established the start and the end of a presumptive causal chain, we can turn to an assessment of the causal relationship between the two.

A cause “is the sum total of the conditions positive and negative taken together ... which being realized, the consequent invariably follows.” (Mill cited in Davidson 1967, 692). However, when assessing additionality it is impractical to take into account “the sum total” of potentially infinite necessary conditions, even the most circumstantial ones.⁷ Instead, **assessing additionality requires to identify unmet necessary conditions which by means of the respective policy intervention will be resolved.** This requires to assess (1) whether the

⁶ The conditions under which pre-existing ETS can or should be linked are subject of ongoing research. Whether or not two linked-up ETS lead to a robust international carbon markets depends inter alia on the compatibility of the design features of the two systems (for a detailed analysis see Tänzler et al. forthcoming).

⁷ Necessary conditions imply that a proposition can only be true if the respective condition is met: if A is not true then B cannot be true. Whether or not we consider the meeting of such conditions as a cause depends how salient and substantial such conditions are. For example, in order for two countries to cooperate under Article 6 of the Paris Agreement requires not only the adoption of the Paris Agreement as a necessary condition, but also the mere existence of nation states. Following the generic definition of “cause” cited above, these two necessary conditions ought to be taken into account in assessing causation. Yet, such circumstantial conditions can hardly be considered a cause on their own.

respective policy intervention in principle addresses the unmet condition and (2) whether it is fit to resolve the deficit.

At the bottom of this is a fundamental dilemma. The first component of this dilemma is to identify unmet conditions or rather decide at which point a condition will be met. The larger the deficit, the more easy it is to identify with confidence an unmet condition. However, the larger the deficit, the more powerful a policy intervention must be to be able to make a significant contribution to remedying the same deficit.

The same is true vice-versa: in cases where a condition is just not met, it is fairly easy to demonstrate that the policy intervention can actually contribute to cross the threshold. However, given that there is typically no clearly defined threshold, it may be challenging to ascertain to determine whether the condition is actually met or unmet in the first place.

In practice, typically, a number of different types of conditions are considered (Gillenwater 2012; World Bank 2016; Schneider et al. 2017). There are, of course, financial conditions. Mitigation activities may not be implemented under business-as-usual conditions if they are not economically viable or if alternative technologies are more economically attractive than the most climate-friendly option. Another related issue may be restricted access to financial capital (World Bank 2016).

Assessing financial additionality was one of the core features of the CDM's additionality tool. The tool requires to demonstrate that a proposed project is not economically viable (by way of cost analysis) or that it is less attractive than alternative options (by way of investment comparison analysis or benchmark analysis) (CDM Executive Board 2012; see also Schneider et al. 2017).

The second part of determining causation, namely to check whether the policy intervention (CDM revenues) were actually fit to pass

the threshold and make the project viable is not required as it was deemed too challenging given the inherent uncertainty about the actual revenues that can be realized (uncertainty about quantity of certified emission reductions and most importantly uncertainty about CER prices).

Instead, it is assumed that the stream of revenue is significant enough to in principle address the issue. However, with CER prices crashing to near zero, this assumption is now more and more called into question (see for example Schneider 2009; Cames et al. 2016; Obergassel et al. forthcoming).

Alongside financial issues, it is often technological barriers that are considered as unmet conditions: for example, lack of availability of low-carbon technologies, lack of awareness, or lack of knowledge about their respective costs and benefits.

One approach to demonstrate such barriers is the so-called common practice test which assess the prevalence or uptake of a certain technology or process. When that technology/process is not (or not widely) available, it can be presumed that it is additional (World Bank 2016). In this case, it is challenging to argue how the support of the policy intervention actually contributes to removing the barrier, at least on the level of an individual project. If a larger (sectoral) policy is under consideration for Article 6, this may be more feasible since one could argue that the establishment of that policy creates a 'critical mass' to attract specialized investors or contractors to deploy the technology in the country.

Another barrier (i.e. unmet necessary condition) concerns split incentives. A proposed activity may be economically viable in and of itself, but the benefits (e.g. savings through improved energy efficiency) are not earned by the same actors that bear the costs for implementing the project. The famous landlord-tenant dilemma is one such example. In this case, it can be argued,

for example, that the revenues from selling credits can be used to create an incentive to those actors who would otherwise not benefit from the implementation of the project.

All of the aforementioned approaches attempt to identify barriers (unmet necessary conditions) at the status quo, at business as usual. However, as discussed above, business as usual should no longer be considered as a baseline against which to assess additionality. This complicates things further.

Another challenge but also an opportunity is the wide range of different forms of cooperation that may emerge under Article 6. As the various forms may have very different start and endpoints for which to consider causal relation-

ships, it will most likely be necessary to develop tailor-made additionality demonstration tools. In some cases, it may be reasonable to identify and assess unmet conditions at the aggregate level and with standardized approaches. In other cases it may be more appropriate to make that judgement at the level of the individual activity.

At least in theory also a combination of approaches would be possible. This could be done, for example, by identifying unmet conditions at the generic sectoral level but to assess whether the policy intervention is fit to overcome that barrier on the level of the individual activity.

5 Governance Aspects of Additionality

One may expect that, different from the CDM, additionality demonstration under Article 6 will be a very political exercise as it will need to take into account countries' NDCs and national policies. One may therefore wonder to what extent international governance will actually be possible as it might quickly collide with the host country's national sovereignty. If additionality demonstration is tied to the host country's NDC but the NDC is weak or national policies are not sufficient to achieve the NDC, will it be possible for international governance to intervene in order to prevent the transfer of "hot air" (Schneider et al. 2017)? The problem is compounded by the fact that formal international governance is not even foreseen for cooperative approaches under Article 6.2.

The following will discuss what additionality demonstration could look like for each of the activity types outlined in section 4 and will then discuss the scope for international governance.

5.1 Project-based and Programmatic Crediting Mechanisms

At first glance, it seems that project-based cooperation under Article 6 could copy and paste the CDM's additionality tool, with one important change: the demonstration of additionality should take into account the host country's NDC and national policies. This would mean that activities required by national regulations or supported by sufficient national fund-

ing schemes could not be considered additional.

Under Article 6.4, international governance could adopt the tool, assess the tool's application to proposed activities and take the final decision whether the activity is additional or not. Under Article 6.2, the role of the UNFCCC would probably at best be limited to adoption of the tool and prescribing that all activities need to apply the tool, but its application and approval of activities would probably be done by the Parties involved.

In an ideal world, where NDCs are ambitious and national policies are in line with that ambition, there would be no problem for international governance. Problems arise if NDCs are weak or national policies are not sufficient to actually achieve the NDC. In such a case, proposed activities could be additional to what the country IS doing but not additional to what the country SHOULD be doing.

However, international governance could never make such a judgement. Such a judgement could conceivably only be made by the prospective buyers of ITMOs; they could inform the host country that they will not be willing to provide funding for activities that are not ambitious. Nonetheless, there would be a risk of low-ambition coalitions as discussed above.

To some extent, use of objective values such as Best-Available-Technology (BAT) benchmarks could solve these problems. International governance could develop methodologies for establishing BAT values and assess application of the methodologies. However, this approach is probably viable only for a number of mostly in-

dustrial sectors where technologies are applied under comparable circumstances that result in comparable specific emission intensities.

5.2 Sectoral Approaches

As outlined in the previous section, in the case of sectoral approaches, additionality is determined not at the level of individual activities but by the establishment of the crediting baseline. In theory, the sectoral crediting baseline could be set at the level of the unconditional NDC. In practice, this will be difficult as most NDCs do not have a sectoral breakdown. The host country would first have to establish a target for the sector that is to be the subject of the sectoral cooperation.

Again, the problem arises who would then judge whether the sectoral target is ambitious. Again, only the buyers of the ITMOs could conceivably make such a judgement. International governance could at best provide methodologies for how to establish sectoral baselines and review whether the application of the methodologies is correct in a technical sense.

5.3 Policy-based Approaches

The question of the additionality of national policies has at least two sub-questions:

- Is the policy necessary to achieve additional mitigation?
- Does the policy create a net cost for the country?

Michaelowa (forthcoming) suggests that emission pricing instruments and financial support schemes tend to be additional as they impose a clearly visible cost on the economy and/or the host country government. By contrast, regulations are not so clear-cut as they often address mitigation options that would be profitable but are nonetheless not undertaken due to split in-

centives or other barriers. He suggests various methodologies to assess the additionality of each type of instrument.

Under Article 6.4, international governance could adopt such methodologies, assess their application to proposed activities and take the final decision whether the activity is additional or not. Under Article 6.2, the role of the UNFCCC would probably at best be limited to adoption of the methodologies and prescribing that all activities need to apply them, but their application and approval of activities would probably be done by the Parties involved. Again, the key difficulty is that the proposed activity may be additional in the host country context only because the country's own efforts are not ambitious, but international governance could not make such a judgement.

5.4 Summary on Potential Roles of International Governance for Different Types of Activities

The above discussion has shown that there is some role for international governance under Article 6, in particular:

- Step 1: Developing tools and methodologies for the demonstration of additionality for different types of activities;
- Step 2: Reviewing whether the tools/methodologies have been correctly applied to the proposed activities.
- Step 3: In the case of projects, programmes and policies international governance under Article 6.4 could conceivably also have the role of approving proposed activities. Under Article 6.2, the role of the UNFCCC could at best extended to step 2. Approval of sectoral approaches could probably not be the subject of international governance even under Article 6.4 as the question of

additionality is directly tied to the host country's level of ambition.

The level of ambition is the crux for all types of activities. Even if a proposed activity is additional to the current level of ambition/implementation, it may still be short of what would be required from the country if its fair share was taken as a benchmark. But it seems highly unlikely that any form of international governance will have a mandate to make such judgements. The only measure of containing this risk that we currently see is to rely on the responsibility of potential buyers of ITMOs.

5.5 Hedging Risks of Low-Ambition Coalitions

Theoretically, the risk generating new “hot air” could be mitigated by tying eligibility to participate in Article 6 to the level of ambition of the NDC. However, the political viability of this approach is probably low. Apart from the difficulty of judging the level of ambition as such, there also is the problem of judging the appropriateness of assumptions used to project business as usual, such as population and economic growth.

Brazil has proposed that eligibility to generate and transfer ITMOs under Article 6.2 should be limited to absolute emission reductions. Such

an approach would not necessarily lead to ambitious action, but it would indeed eliminate a huge part of the environmental integrity risk. The downside would be that it would de facto exclude most developing countries from participation. One may consider that the lack of international governance under Article 6.2 is a huge privilege that should indeed be limited to countries who are at least not increasing their emissions further. The political viability of this approach remains to be seen.

Otherwise, the only viable way to prevent coalitions of the unambitious seems to be transparency, naming and shaming. Discussions should explore what technical provisions could be useful to facilitate such transparency. Two candidates are:

- Parties using Article 6 could be required to report how their use of Article 6 has helped them increase ambition as required by Article 6.1. This reporting could be made subject of the international review under the PA's transparency mechanism.
- Transfers of ITMOs could be limited to the partners that directly participate in the Article 6 activity. That is, sales to intermediaries would be excluded. Such a provision would prevent the dilution of responsibility that would occur if the final user of the ITMO is different from the acquiring Party that helped generate it.

6 Summary and Conclusions

6.1 How to Establish the Baseline for Additionality?

Additionality was considered a critical cornerstone for environmental integrity in the Kyoto world. Its core function was to make sure that using flexible mechanisms did not lead to an increase of overall global emissions. However, the architecture of the Paris Agreement is fundamentally different from the Kyoto Protocol. The issue of environmental integrity that the additionality concept is meant to protect has to be addressed differently. This paper set out to explore the various core elements of additionality and additionality assessment in the context of the Paris Agreement in order to lay the conceptual foundations for the operationalization of additionality for application for market-based cooperative climate action under Article 6 of the Paris Agreement.

A first key step in this analysis was to determine the baseline against which additionality ought to be assessed. The transformational ambition of the Paris Agreement and the universal mandate to develop and communicate increasingly more ambitious NDCs makes it clear that the status quo or business as usual can no longer serve as reference points for additionality assessment, as it would risk locking in a vastly insufficient level of ambition.

Ideally, any activity under Article 6 would build on this and go beyond the respective host country's NDC. However, in practice, this will be extremely challenging for a number of reasons:

- NDCs may be not ambitious enough and not in line with a transformational pathway towards well below 2 °C.
- Even if NDCs are ambitious, the actual implementation may be insufficient.
- Many NDCs do not specify to what extent external support (financial and/or technological) is required. Whenever external financial support is required, it is unclear whether this support could be provided through cooperative approaches or whether other forms of climate finance should be prioritized.
- Last but not least, additionality assessment requires a high level of (sector-specific) detail which most often is not included in the NDCs themselves.

6.2 How to Establish Causality and Unmet Conditions?

Almost as important as establishing a baseline to which a proposed activity is supposed to be additional is to precisely specify what should be considered the cause and what is the effect. After all, assessing additionality is a matter of establishing a causal relationship between some sort of policy intervention and proposed activities that actually deliver mitigation results. If you do not define the start and endpoint of the presumed causal chain, how can you determine a causal relationship?

At the current state of negotiations, there is still a very high degree of uncertainty of how specific "policy interventions" could look like. While it

is safe to assume that for the mechanism established under Art. 6.4 at some point there will be a precise description of the mechanism as a policy intervention, this is not the case for cooperative approaches under Art. 6.2.

In section 4.1 we have therefore sketched a range of different forms in which international cooperation could be operationalized under Art. 6, ranging from project-based mechanisms of the likes of CDM/JI to linking of national and/or regional emissions trading efforts. Especially for the latter, it is extremely difficult to identify a specific policy intervention and at least as difficult to single out the effect of that intervention. Consequently, assessing additionality cannot be meaningfully applied for all potential incarnations of Art. 6 cooperation. Also, any guidelines for additionality demonstration need to take into account the details of the proposed form of cooperation. To put it metaphorically, establishing guidelines for additionality demonstration without knowledge of the forms of cooperation is like designing a chicken shed without knowing what kind of birds will eventually hatch from the eggs before you.

Even if you have a clear understanding of what the start and endpoint of the presumed causal chain is, it may still be challenging to actually establish a causal relationship between the two. In practice, assessing additionality requires to identify unmet necessary conditions which by means of the respective policy intervention will be resolved. This requires to assess (1) whether the respective policy intervention in principle addresses the unmet condition and (2) whether it is fit to resolve the deficit.

In the past, this has been addressed by focusing on a few types of barriers/unmet conditions. Among the most prominent are financial issues. In the CDM world, projects typically demonstrated that proposed activities are not economically viable and/or that more economically attractive alternatives were available. It was then assumed that the revenues generated

from CER sales would compensate these shortcomings.

Other barriers included the availability of and/or knowledge about technologies. While it may be relatively easy to demonstrate that such barriers indeed constitute an unmet condition, it is more challenging to argue how a policy intervention can resolve that barrier.

Another related challenge is that most of the established tools for additionality demonstration such as investment analysis and common practice tests implicitly recur on the status quo. However, as explained above, the status quo should not be allowed as a baseline against which additionality is demonstrated. Under the CDM, it may have been sufficient that a certain technology is not yet common practice in a given host country. Under the Paris Agreement, we need to further consider to what extent the technology ought to be common practice with the NDC adequately implemented, or even better, on a pathway that is consistent with the well-below 2 °C target.

6.3 Where to Get Information on Transformational Challenges?

Our analysis highlights that assessing additionality in the context of the Paris Agreement requires a precise understanding of the transformational challenges of the specific sector for which an activity is planned. Unfortunately, it is highly unlikely that this clarity can come from the NDCs themselves. And, as the discussion in section 5 demonstrates, while there is some room for international governances, it is also highly unlikely that any form of international governance could advance and specify an additionality baseline above and beyond the NDCs. This would just collide too strongly with national sovereignty.

So what other reference points may be there to gain a more specific picture of transformation challenges? One potential starting point could be the long-term low greenhouse gas development strategies that parties are invited to prepare in accordance with Art. 4.19 of the Paris Agreement. Ideally, such long-term strategies would lay out the respective national transformation pathway towards a 2/1.5 °C compatible economy and society. They would not only cover sectoral visions, but also spell out the barriers and gaps that still need to be filled in order to embark on that pathway. However, to date only a handful of countries have presented such long-term strategies.

Some of the other elements of the Paris Agreement could also serve as reference points. One such example is the transparency mechanism established in Art. 13 of the Paris Agreement. Art. 13.11 and .12 stipulate that a technical expert review shall be conducted to consider the implementation of a country's NDC and "identify areas of improvement for the Party" (UNFCCC 2016a, Art. 13.12).

Likewise, the so-called Global Stocktake pursuant to Art. 14 of the Paris Agreement could serve as a point of reference. The Global Stocktake is supposed to aggregate national data in order "to assess the collective progress towards achieving the purpose of this Agreement and its long-term goals" (UNFCCC 2016a, Art. 14.1). It is beyond the mandate of the Global Stocktake to develop country-specific recommendations or even instructions. Still, the Global Stocktake is supposed to inform the development of subsequent NDCs. If the Stocktake developed a sectoral perspective on transformation challenges as well as strategies and means to address those challenges, it could not only well serve this mandate but would also be particularly informative for assessing additionality.

Given that the first round of technical expert reviews and the first global stocktake will only

be completed by 2023, they cannot (yet) serve as reference points for additionality demonstration. However, it is worth keeping in mind when the detailed rulebook for both the transparency framework and the global stocktake is negotiated in the upcoming UNFCCC meetings.

From the existing toolbox, the concept of sectoral standardized baselines and best available technology (BAT) benchmarks could serve as a starting point to develop an understanding of the transformation challenges of the respective sectors. Yet, these tools would have to be adapted to fit the context of the Paris Agreement and reflect its transformational ambition.

Alternatively, if it is not possible to come up with a robust baseline against which additionality can be assessed, it may be worth slightly adjusting the question. Instead of demonstrating the additionality one could ask whether or not the utilization of Art. 6 serves as a leg-up to a transformational, well below 2 °C-compatible pathway. Given the current deficits of NDCs and their implementation, Article 6 would make a strong contribution if it was used to jump-start the required transformation and help host countries to get onto a low carbon, climate resilient development pathway. Instead of asking whether international cooperation helps to do more than the current (insufficient) level, one would ask whether international cooperation helps to do enough. Instead of additionality, the decisive criterion would be whether the proposed cooperation provides a significant contribution to transformational change.

While this approach may sound appealing, there are a number of questions that cannot be addressed in this Policy Paper and would require further research. Are there (objective) ways to assess the transformational impact of a proposed activity? To what extent can existing approaches such as Standardized Baselines and BAT benchmarks serve as a starting point for such an assessment, if adapted appropriately to the context of the Paris Agreement? How can

environmental integrity concerns be addressed when the transformational change criterion is applied? To what extent can short crediting periods and/or adjusted crediting baselines address these concerns?

6.4 How to Govern for Additionality?

Despite the political nature of determining additionality in the world of the Paris Agreement, international governance has a role to play in the development of tools and methodologies and reviewing their application. The core challenge for international governance is the connection of additionality to the level of ambition of the host country's NDC. Even if a proposed activity is additional to the current level of ambition/implementation, it may still be short of what would be required from the country if its fair share was taken as a benchmark. But it seems highly unlikely that any form of international governance will have a mandate to make such judgements.

Theoretically, the risk of generating new "hot air" could be mitigated by tying eligibility to participate in Article 6 to the level of ambition of the NDC. However, the political viability of

this approach is probably low. The same may apply to Brazil's proposal to limit eligibility to generate and transfer ITMOs to absolute emission reductions.

Decoupling the determination of additionality from the NDCs by using approaches such as best available technology values could help overcoming this problem to some extent, but is probably viable only for a limited number of sectors.

Where such approaches are not viable, the only measure of containing the risk of low-ambition coalitions may be to rely on the responsibility of potential buyers of ITMOs, transparency, naming and shaming. Discussions should explore what technical provisions could be useful to facilitate such transparency. Two candidates are:

- Parties using Article 6 could be required to report how their use of Article 6 has helped them increase ambition as required by Article 6.1. This reporting could be made subject of the international review under the PA's transparency mechanism.
- Transfers of ITMOs could be limited to the partners that directly participate in the Article 6 activity to prevent the dilution of responsibility that would occur if the final user of the ITMO is different from the acquiring Party that helped generate it.

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